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PSYCHOLOGY.¹

Will and Reason in Animals.—One of the greatest needs of psychology is a suitable technical terminology. In most of the other sciences, the words used have a constant meaning, and one feels reasonably sure of understanding what the author wishes to say. In psychology there are few terms in use that are not ambiguous. The psychologist has adopted the phraseology of current speech, and too often, in endeavoring to free it of its ambiguity, he forgets that that very ambiguity bears witness to a complexity in the matter to be described which should not be arbitrarily simplified.

Especially is this found true when we endeavor to interpret the mental processes of the lower animals in terms of our own. We are ourselves "conscious," we "judge," "reason," "will," and we ask whether the lower forms of life are "conscious," whether they can "judge," "reason," "will." Such questions are vain unless we know precisely what mental processes we designate ourselves when we use the words. Yet, in most current discussions, it is apparently taken for granted that these words have a meaning; that the writer not only understands their meaning himself, but is assured that his readers will take them in the same sense. Even in the few cases where some serious attempt is made to exhibit the exact sense of the terms used, the writer proceeds upon the assumption that they have but one legitimate sense, and that that is the sense in which he uses them.

But, in fact, no words in common use have any precise meaning, and if this is true of all, it is doubly true of those which express the results of crude introspection, performed, for the most part, with practical ends in view only. Such are most of our psychological terms. While the processes which are designated by any one always have some inner bond of similarity, that bond may be, from the point of view of the scientific psychologist, of relatively slight importance in view of the variations to be found within it.

Let us, for example, examine some of the words used of conduct. The reflex and instinctive are commonly contrasted with the voluntary, and the impulsive are contrasted with the rational. The reflex, instinctive and impulsive are regarded as "lower types," since we share them with the lower animals; the voluntary and rational are the

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"higher types," and much discussion has been expended on the question whether these also are found in the lower animals or not.

The word "voluntary" is used in three quite distinct senses, but all contain a common element. In its broadest sense, any act is voluntary which is performed at the instigation of a thought. In this sense it is contrasted with "forced" acts, such as those performed under physical compulsion with acts performed under physiological compulsion, such as reflexes, and with acts performed under what we may turn psychical compulsion, as the instinctive. Many impulses, especially those which hurry into action without allowing time for reflection, are felt to be only partly voluntary.

Now, at all times, one's actual thought content comprehends two groups of elements—those originated from within by association and habit and those originated from without by the suggestions of the environment. For the most part, the two blend into a harmonious whole and both find expression in conduct. But, occasionally, the two clash. If then, the environment wins the day and controls conduct, even though it be done through the intervention of thought, we are inclined to deny that the conduct is voluntary. If I surrender my purse at the the point of a pistol, I would not call the act voluntary, yet it is not involuntary in the same sense in which it would have been had the highwayman taken my hand and, by main force, thrust it into my pocket, closed it upon my purse, and withdrawn it.

So of other cases. Control by the idea train invariably implies, in some degree, the ability to withstand the solicitations of the environment. The adult feels most of those solicitations so slightly that he is scarcely aware of their presence. But it is different with a child. The child is ever "in mischief," because his ideation has not developed far enough to offset the tempting invitation "Eat me," "Break me," "Set me on fire," by foresight of the latter end. It is in those cases in which the inner control clearly gets the better of the outer that we feel the power of "will" to be manifested. This, then, is a second sense of the word voluntary.

It is only through sensation and idea, on the whole, that the environment can enter into a man's mind and control his acts. The reflexes are exceptions, but they are, for present purposes, negligible. And its entrance is accompanied by a sense of conflict, as if the kingdom were divided against itself. Now a similar feeling often arises in cases in which the influence of the environment as such is scarcely to be noticed. Every man's mind is a polity, and its habitual usages and active principles not infrequently conflict. Then we commonly invoke

our more remote past in some fashion at present incomprehensible, and there emerges that intangible, contentless power which, like the rudder on a ship, avails to hold us steadily to the course already planned, and makes our present and future symmetrical with our past. This is what we term "will" in the narrowest sense, and it is a comparatively rare phenomenon in the experience of most of us.

If we turn from such an analysis to the problem of volition in the lower animals, we find it much simplified. There can be no doubt that in the higher vertebrates, at least, the idea trains, however rudimentary, control conduct to some degree. Yet the part played by the reflexes and instincts is so much greater in them than in us, and ideation is so scanty that the sphere of the voluntary is much restricted. Cases of conflict, in which the ideal control overcomes the solicitations of sense, are probably of rare occurrence. I noted, a case not long ago, however, which seems here in point. A friend of mine had a very intelligent Irish terrier, who, having been bred to thrifty habits, knew better than to eat a scrap of food which had "cost money" until it had been "paid for." In the agonizing interval I have frequently seen him resort to what seemed to be expedients to overcome the temptation. He seemed to feel that the bit of meat exerted a specific attractive force upon his organized reflexes, that he could not help snapping at it if he allowed himself to look. He would dance about near it, carefully keeping his head twisted to one side, so as to keep the tempting morsel out of sight; sometimes, if the words "It's paid for, Patsy," were long delayed, he would run to the farthest corner of the room and stay there until he heard them. Then he would dart for the food so hastily that he sometimes fell in turning towards it, showing that he had had it in mind all along. It would seem that this dog, at least, was able to exert some direct ideational control over his reflexes, and was sufficiently intelligent to use suitable means to support that control when it was about to fail.

For the existence of the highest form of will in the lower animals, we have no direct evidence, and it is difficult to see how we ever can have any. In ourselves it is rare and elusive; it is known by introspection only, and can not be inferred in another by any external signs. The very fact that it is so unusual in us, and that it appears to be characteristic of the more highly evolved types of the human mind, raises a strong presumption against its existence in the lower minds.

The word "rational" has had a history very like that of "voluntary". In its simplest sense it designates conduct controlled by a more distant end; it is thus opposed to the impulsive conduct which seeks the pres-

ent end. It implies, therefore, the presence of complex associative processes. "Irrational" conduct is that which is inconsistent with some accepted end.

Foresight of the future and its accompanying apprehension of various possible ends always involves competition between those ends for the control of conduct. For various reasons into which I cannot now enter, the intrinsic attractiveness of most ends tends to vary from time to time, hence it is always possible that the end which survives competition and controls conduct soon loses its power, and the actor falls a prey to regret. This is especially likely to be the case when there has been little deliberation, or when the end adopted is near at hand. Thus the word "rational" has been transferred from conduct controlled by a distant rather than by a nearer end, to conduct controlled by an approved end, that is, by an end whose attractive power remains constant under all circumstances. In ordinary parlance, that conduct is "reasonable" which most men are inclined to, but a little reflection will convince any one that no conduct is reasonable for one, save that whose adoption does not involve the relinquishment of some end of greater or more permanent attractiveness.

In the first sense of the word "irrational," it is probable that some of the lower animals are more rational than others. But, on the whole, brutes are adapted to the coming environment rather by instinct than by reason, *i. e.*, rather by a series of psychical reflexes awakened by present stimuli than by conscious foresight of the future, giving rise to an analogous series of representative ideas. The sphere of ideational control is probably restricted to the immediate future. Hence it is scarcely possible that brutes should be rational in the second sense.

Some writers use "rational" as equivalent to "ethical," *i. e.*, of ends enforced by the community upon the individual. The usage rests upon the assumption that those principles which ultimately approve themselves to the individual are essentially in harmony with those enforced by the community. But it is not customary to enquire whether animals are rational in that sense, and I may ignore it for the present.

ANTHROPOLOGY.¹

New Evidence of glacial Man in Ohio.—In a paper before a joint meeting of the Anthropological and Geological sections of the A. A. S. I presented detailed evidence of the discovery, in the glacial

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